

REMARKS

Applicant has carefully reviewed the non-final Office Action of April 2, 2010, in which claims 1-21 are pending and have been rejected. With this response, claims 1, 3, 4, 8-12, 14-18, 20 and 21 have been amended, claims 2, 5 and 7 have been cancelled, and claim 22 has been newly presented. No new matter has been added by these amendments. Favorable further consideration is respectfully requested in light of the above amendments and following remarks.

Claim Rejections under 35 U.S.C. § 112

Claim 17 was rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement.

This claim has been amended to delete the offending language. Applicant consequently submits that claim 17 is now in compliance with 35 U.S.C. §112, first paragraph.

Claims 1 and 16 (and dependent claims 2-15 and 17-21) were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 16 have been amended to delete the “such as...” clauses. Accordingly, Applicant submits that claims 1-21 are now in compliance with 35 U.S.C. §112, second paragraph.

Claim Rejections under 35 U.S.C. § 103

Claims 1-7, 10-16 and 18-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over De Toni, U.S. Patent No. 7,423,738 in view of Kanzaki, JP 61-175552. Applicant respectfully traverses the rejection.

De Toni discloses (see in particular Figure 5) an inspection system for security documents comprising a hollow rotating cylinder 10 provided with transparent sectors 10a, 10b, a lighting device 3 located inside the rotating cylinder 10 and an acquisition camera 5 located outside the rotating cylinder 10.

Grippers 11 are further provided on the rotating cylinder 10 to hold a leading edge of a sheet B to be inspected. In that respect, it should be appreciated that Figure 5 of De Toni shows two sets of grippers.

As acknowledged by the Examiner, De Toni does not provide for input and output transfer cylinders as claimed (or any additional inspection unit as now recited in independent claim 1). There is furthermore no indication in De Toni that a sheet would be transferred directly from one transfer or inspection cylinder to another and in such a manner that an inspect printed sheet is taken away from the inspection cylinder 10 only once the inspection of the sheet is completed by the inspection unit.

Kanzaki discloses a method and machine for detecting a defect existing on or inside a paper sheet, such as an insect being mixed into or attached to the paper sheet during the manufacture thereof. It should be appreciated that Kanzaki is directed to inspecting the blank sheets of paper prior to any printing thereon. The purpose of Kanzaki, therefore, is not to inspect printed matter as claimed, but rather to inspect blank paper prior to any printing process.

In any case, the detection unit 20 shown in Figure 2 of Kanzaki shows three inspection units, such detect unit 20 appears to be designed in such a way that the sheets being inspected are taken away from the relevant inspection cylinder 23, 24, 25 while they are still being inspected by the corresponding inspection units 2, 5, 8. Indeed, the inspection units 2, 5 and 8 are located close to the point where the sheets are transferred to downstream units, meaning that inspection of the sheets will not be completed before the sheets are transferred to a subsequent unit. Further, Kanzaki is silent about the first, second and third inspection units being disposed in such a manner that the sheet is taken away from the first, second or third inspection cylinder only once the inspection of the sheet is completed by the first, second or third inspection unit.

Turning to the claims, claim 1 recites "wherein the first, second and third inspection units and the input and output transfer cylinders are arranged in such a manner that the printed sheet is transferred directly from one transfer or inspection cylinder to another and that the inspected printed sheet is taken away from the first, second or third inspection cylinder only once the inspection of the sheet is completed by the first, second or third inspection unit." As discussed above, neither reference discloses such a feature.

Therefore, when all words in the claim are properly considered when judging the patentability of that claim, it can be seen that claim 1 is non-obvious over the prior art.

Further, the Examiner suggests that the motivation for making the proposed combination is "to provide a high speed operation by employing such a sheet feeding mechanism". However, there is no suggestion in either document that the arrangement of Kanzaki is faster than that of De Toni. To the contrary, De Toni teaches that its invention has "an extremely efficient arrangement." Column 6, line 63. Because the illumination is on one side of the sheet to be inspected and the camera is on the other, both sides as well as the sheet itself are inspected simultaneously. Tripling the number of components including the expensive cameras would increase expense without providing any known benefit. (Further, Kanzaki does not teach the use of cameras, merely the use of photodetectors.) Therefore, Applicant submits that claim 1 is allowable for the additional reason that there is no motivation to make the proposed combination.

Claim 10 recites "wherein the first, second and third inspection cylinders are carrying only one set of grippers each, and the diameter of the first, second and third inspection cylinders is minimized for minimal transport and inspection time." As noted above, De Toni teaches in Figure 5 that its cylinder includes two sets of grippers. (Figure 6, noted by the Examiner, is only a partial view.) Therefore, when all words in claim 10 are properly considered when judging the patentability of that claim, it can be seen that claim 10 is non-obvious over the prior art for this additional reason.

Independent claim 16 recites "once the first inspection is terminated, the printed sheets are transferred to a second inspection unit in which a second inspection of a first side of the printed sheets is carried out, the printed sheets being transported in the second inspection unit by a second inspection cylinder; once the second inspection is terminated, the printed sheets are transferred to a third inspection unit in which a third inspection of a second side of the printed sheets is carried out, the printed sheets being transported in the third inspection unit by a third inspection cylinder; once the third inspection is terminated, the printed sheets are transferred to a marking unit and are marked as defective if the result of one of the first, second and third inspections shows a defect."

Therefore, for the reasons discussed above with respect to claim 1, Applicant submits that claim 16 is likewise in condition for allowance.

With regard to claims 11 and 19, Kanzaki does not disclose that the transfer and inspection cylinders are arranged in a zigzag manner. To the contrary, on page 7, last paragraph, Kanzaki teaches that the cylinders “are arranged almost horizontally with the side surfaces thereof in contact with each other” and the figures show the deviation from the horizontal to be a slight arc, and not a zigzag arrangement of the cylinders. There is also no teaching in Kanzaki that the transport length is optimised for a given sheet length or (claims 12 and 20) greater than a given sheet length. The lines of Kanzaki cited in the Office Action with regard to this feature (“A cylindrical body 10, transversally rotating into the inspecting system, has a sufficient length for a banknote sheet B to be placed over it.”) say nothing about a transport length as defined in the claims. For example, the length discussed could be the dimension of the cylinder from one circular end to the other. In any case, claim 11 recites “a transport length of a printed sheet on each of the first, second and third inspection cylinders, between an input location where a printed sheet is transferred onto the first, second or third inspection cylinder and an output location where the printed sheet is transferred away from the first, second or third inspection cylinder is optimised for a given sheet length.” Neither De Toni nor Kanzaki have anything to say about the distance between the input location on a cylinder when a sheet is transferred onto the cylinder and an output location where a sheet is transferred off the cylinder. Therefore, when all words in these claims are properly considered when judging the patentability of that claim, it can be seen that these claims are non-obvious over the prior art for this additional reason.

Further, claims 3, 4, 6, 10-15 and 18-22 are thought to be in condition for allowance for the additional reason that they depend from claims 1 and 16, which are in condition for allowance, and contain additional elements. Claims 2, 5 and 7 have been cancelled.

Claims 8-9 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over De Toni in view of Kanzaki and further in view of Armanini, U.S. Patent No. 7,185,749. Applicant respectfully traverses this rejection.

Armanini is directed to a currency bill recycling machine and is neither cited for, nor appears to remedy the deficiencies in the art discussed above. Therefore, for the reason that claims 8-9 and 17 depend from one of claims 1 and 17 and contain additional elements, these claims are thought to be in condition for allowance.

Conclusion

Reconsideration and further examination of the rejections are respectfully requested. It is respectfully submitted that all pending claims are now in condition for allowance. Issuance of a Notice of Allowance in due course is requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,
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By his Attorney,

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